

REMARKS

112 Rejections

Claims 1-10 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most clearly connected, to make and/or use the invention. Applicants respectfully disagree and respectfully assert that that the phrase “during multiple stages” is subject matter which was described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most clearly connected, to make and/or use the invention. In an effort to satisfy the Examiner’s concerns the Applicants have amended Claim 1 to indicate “captured at multiple stages”.

Claims 1-10 are rejected under 35 U.S.C. 112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants respectfully disagree that the phrase “during a first stage” and “during a second stage” are indefinite and Applicants respectfully assert that the phrase is not used in a context contrary to what one of ordinary skill in the art at the time of the invention would understand. In an effort to satisfy the Examiner’s concerns the Applicants have amended Claim 1 to indicate “captured at multiple stages”.

35 U.S.C. §102 Rejections

Claims 1, 3 and 15 – 18 are rejected under 35 U.S.C. §102(e) as being anticipated by Li, Hehching Harry (US 6023778 A). Applicants have reviewed the Li reference and, for the following rationale, Applicants respectfully submit that the present invention is not anticipated nor rendered obvious by the Li reference.

Applicants respectfully contend that the Li reference fails to teach or suggest a trigger signal and a scan test enable signal as recited in newly amended independent Claim 1. For instance, amended Claim 1 recites in part (emphasis added):

a scan test enable trigger sensing component adapted to provide an assertion or deassertion notification when logical values of a trigger signal captured at multiple stages provide an indication to begin a scan test enable signal assertion or deassertion; and

a staging component ... for ... issuing an asserted or deasserted scan test enable signal based upon said assertion or deassertion notification from said scan test enable trigger sensing component.

Applicants respectfully submit that the Li reference does not teach or suggest an assertion or deassertion notification when logical values of a trigger signal are captured to begin a scan test enable signal assertion or deassertion as claimed in the present application. Moreover, the Li reference fails to teach or suggest a staging component

for issuing a scan test enable signal based upon notification from a scan test enable trigger sensing component.

Applicants respectfully assert that to the extent the Li may teach delaying a scan test mode enable signal, it does not teach issuing a scan test enable signal based upon notification from a scan test enable trigger sensing component. The present Office Action interprets that the OR circuit 94 of Li is a scan test enable trigger sensing component and the buffer unit 91 is a staging component. Applicants respectfully assert that even if this is a correct interpretation of the Li teachings that Li does not teach “staging component” 91 receiving a notification from “scan test enable trigger sensing component” 94. In addition, the present Office Action interprets the scan mode signals received via input mode 53 are trigger signals. Even if this is a correct interpretation, Applicants respectfully assert that the Li reference teaches that a scan mode signal is also a scan enable signal [Col. 1 lines 25 through 27]. Applicants respectfully assert that the present invention claims issuing a scan test enable signal, not receiving a scan enable signal as an input.

Furthermore, Applicants respectfully assert that the Li teaches away from the present invention by indicating scan enable signals are received from a scan mode pad [Col. 3, lines 58 through 59; Col. 4, lines 35 through 38; and Col. 4 lines 65 through 67]. Applicants respectfully assert that the present application points out that this approach uses up valuable resources [Page 4, paragraph 2 starting on line 7]. As such, Applicants

respectfully submit that the Li reference does not teach or suggest elements recited in amended Claim 1.

Based on the above rationale, Applicants respectfully submit that amended independent Claim 1 is not anticipated nor rendered obvious by the Li reference. Applicants respectfully assert that Claims 3 is allowable as depending from an allowable independent Claim. Therefore, Applicants respectfully submit Claims 1 and 3 are allowable over the Li reference.

Applicants respectfully contend that the Li reference fails to teach or suggest a trigger signal and a scan test enable signal as recited in newly amended independent Claim 15. For instance, amended Claim 15 recites in part (emphasis added):

- ...b) asserting a scan test enable signal based upon logical values in said trigger signal; ... and
- e) utilizing a normal functional pin to communicate said trigger signal.

Applicants respectfully submit that the Li reference does not teach or suggest asserting a scan test enable signal based upon logical values in said trigger signal as claimed in the present application. Moreover, the Li reference fails to teach or suggest utilizing a normal functional pin to communicate the trigger signal.

Applicants respectfully assert that to the extent the Li may teach delaying a scan test mode enable signal, it does not teach issuing a scan test enable signal based upon a

trigger signal. The present Office Action interprets that the scan mode signal 202 [Col. 4, lines 35 through 40] is an input. Even if this is an accurate interpretation, Applicants respectfully assert the present claimed invention claims asserting a scan test enable signal based upon logical values in said trigger signal, not receiving a scan enable signal as an input. The present Office Action appears to interpret that the trigger signal is communicated via pad 50 (Applicants assume the 250 reference is a typo). Applicants respectfully assert that Li indicates that pad 50 is utilized to communicate a scan test enable signal as an input [Col. 3, lines 58 through 59; Col. 4, lines 35 through 38; and Col. 4 lines 65 through 67] and not for communicating a trigger signal.

Furthermore, Applicants respectfully assert that the Li teaches away from the present invention by indicating scan enable signals are received from a scan mode pad [Col. 3, lines 58 through 59; Col. 4, lines 35 through 38; and Col. 4 lines 65 through 67]. Applicants respectfully assert that the present application points out that this approach uses up valuable resources [Page 4, paragraph 2 starting on line 7]. As such, Applicants respectfully submit that the Li reference does not teach or suggest elements recited in amended Claim 1.

Based on the above rationale, Applicants respectfully submit that amended independent Claim 15 is not anticipated nor rendered obvious by the Li reference. Applicants respectfully assert that Claims 16 through 18 are allowable as depending from an allowable independent Claim. Therefore, Applicants respectfully submit Claims 16 through 18 are allowable over the Li reference.

103 Rejections

The present Office Action indicates Claim 2, 4 -14 and 19 -21 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Li, (US 6023778 A). Applicants respectfully assert that the present invention is neither shown nor suggested by the Li reference. The present Office Action acknowledges that the Li reference does not teach the use of a PCI reset signal as a trigger signal.

With respect to Claim 2, the present Office Action indicates that a reset signal is expected from scan pad mode 50. Applicants respectfully assert that the Li reference indicates that a scan test enable signal is expected from scan pad mode 50 [Col. 3, lines 58 through 59; Col. 4, lines 35 through 38; and Col. 4 lines 65 through 67] and not a reset signal. Applicants respectfully assert that the use of a reset signal on a pad dedicated to a scan test enable signal would not have been obvious. Applicants respectfully assert that Li reference and does not teach, suggest, nor rendered obvious the present claimed invention.

With respect to Claim 4 and 7, the present Office Action indicates that expanding the LI teachings to include a third stage would have been obvious. Even if this is a correct interpretation, Applicants respectfully assert that the Li reference does not teach or render obvious maintaining an active scan mode signal status as claimed in the present application.

With respect to Claim 5 , the present Office Action indicates see rejection to Claim 2. Applicants respectfully assert that for the reasons discussed above, Li does not teach or render obvious the elements and limitations of Claim 5.

With respect to Claim 6 the present Office Action indicates see 201 and 204 in Figure 5 of Li. Applicants respectfully assert that 201 and 204 in Figure 5 of Li do not teach or render obvious a NAND boolean logic component as claimed in the present application.

With respect to Claims 8 and 9 , the present Office Action indicates see rejection to Claim 5. Applicants respectfully assert that for the reasons discussed above, Li does not teach or render obvious the elements and limitations of Claims 8 and 9.

With respect to Claim 10 , the present Office Action indicates see rejection to Claims 1 - 9. Applicants respectfully assert that for the reasons discussed above, Li does not teach or render obvious the elements and limitations of Claim 10.

With respect to Claim 11 the Present Office Action indicates Li teaches a scan test enable signal assertion system. Applicants respectfully assert that for the reasons discussed above the Li reference does not teach a scan test enable signal assertion system as claimed in the present application. Furthermore, Applicants respectfully assert that the Li reference does not teach the ability to communicate test data off an

ASIC or printed circuit board from either said functional component or said input port. Applicants respectfully assert that the Li reference does not teach or render obvious the present claimed invention as claimed in Claim 11.

With respect to Claim 12 Applicants respectfully assert that the Li reference does not teach the ability to communicate test data off from either said functional component or said input port.

With respect to Claim 13, the present Office Action indicates see rejection to Claims 11 and 12. Applicants respectfully assert that for the reasons discussed above Li does not teach or render obvious the elements and limitations of Claim 13.

With respect to Claim 14 , Applicants respectfully assert that for the reasons discussed above the Li reference does not teach a scan test enable signal assertion system as claimed in the present application.

With respect to Claim 19, the present Office Action indicates that expanding the Li teachings to include a third stage would have been obvious. Even if this is a correct interpretation, Applicants respectfully assert that the Li reference does not teach or render obvious maintaining an active scan mode signal status as claimed in the present application.

With respect to Claim 20, the present Office Action indicates see rejection to Claim 2. Applicants respectfully assert that for the reasons discussed above Li does not teach or render obvious the elements and limitations of Claim 20.

With respect to Claim 22, the present Office Action indicates see rejection to Claim 1. Applicants respectfully assert that for the reasons discussed above Li does not teach or render obvious the elements and limitations of Claim 21.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made".


Conclusion

In light of the above-listed amendments and remarks, Applicants respectfully request allowance of the remaining Claims. The examiner is urged to contact Applicant's undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,

WAGNER, MURABITO & HAO

Date: 3/7, 2003



John F. Ryan
Reg. No. 47, 050
Two North Market Street
Third Floor
San Jose, CA 95113
(408) 938-9060

VERSION WITH MARKINGS TO SHOW REVISIONS MADE

IN THE CLAIMS

1(AMENDED) An automatic scan test enable signal assertion system comprising:

a scan test enable trigger sensing component [adapted to provide] for providing an assertion or deassertion notification when logical values of a trigger signal captured [during] at multiple stages provide an indication to begin a scan test enable signal assertion or deassertion; and

a staging component coupled to said scan test enable trigger sensing component, said staging component [adapted to advance] for advancing said logical values of said trigger signal through a plurality of stages in accordance with a progression signal and [issue] issuing an asserted or deasserted scan test enable signal based upon said assertion or deassertion notification from said scan test enable trigger sensing component.

11(AMENDED) An automatic scan test enable signal activation system comprising:

a scan test enable signal assertion system [adapted to] for automatically [assert] asserting or [deassert the] deasserting a scan test enable signal in response to transitions in a trigger signal and stage progression signal;

a mutliplexer (MUX) coupled to said automatic scan test enable signal assertion system, said multiplexer [is adapted to facilitate] facilitates transmission of signals depending upon the assertion of a scan test enable signal;

a functional component coupled to said multiplexer, said functional component [is adapted to perform] performs normal operations of an ASIC or printed circuit board;

an input port coupled to said functional component, said input port [is adapted to function] functions as input connections that communicate signals to said ASIC or said printed circuit board;

a NAND gate coupled to said input port, said NAND gate [is adapted to capture] for capturing information from said input port; and

a test data output port coupled to said multiplexer, said test data output port [adapted to communicate] for communicating test data off of said ASIC or said printed circuit board from either said functional component or said input port.

15(TWICE AMENDED) An automatic scan test enable signal assertion method comprising the steps of:

- a) transitioning logical values of a trigger signal;
- b) asserting a scan test enable signal based upon logical values in said trigger signal;
- c) suspending transitions in a stage progression signal;
- d) deasserting said scan test enable signal if a transition occurs in said stage progression signal; and
- e) utilizing a normal functional pin to communicate said trigger signal [and said stage progression signal].